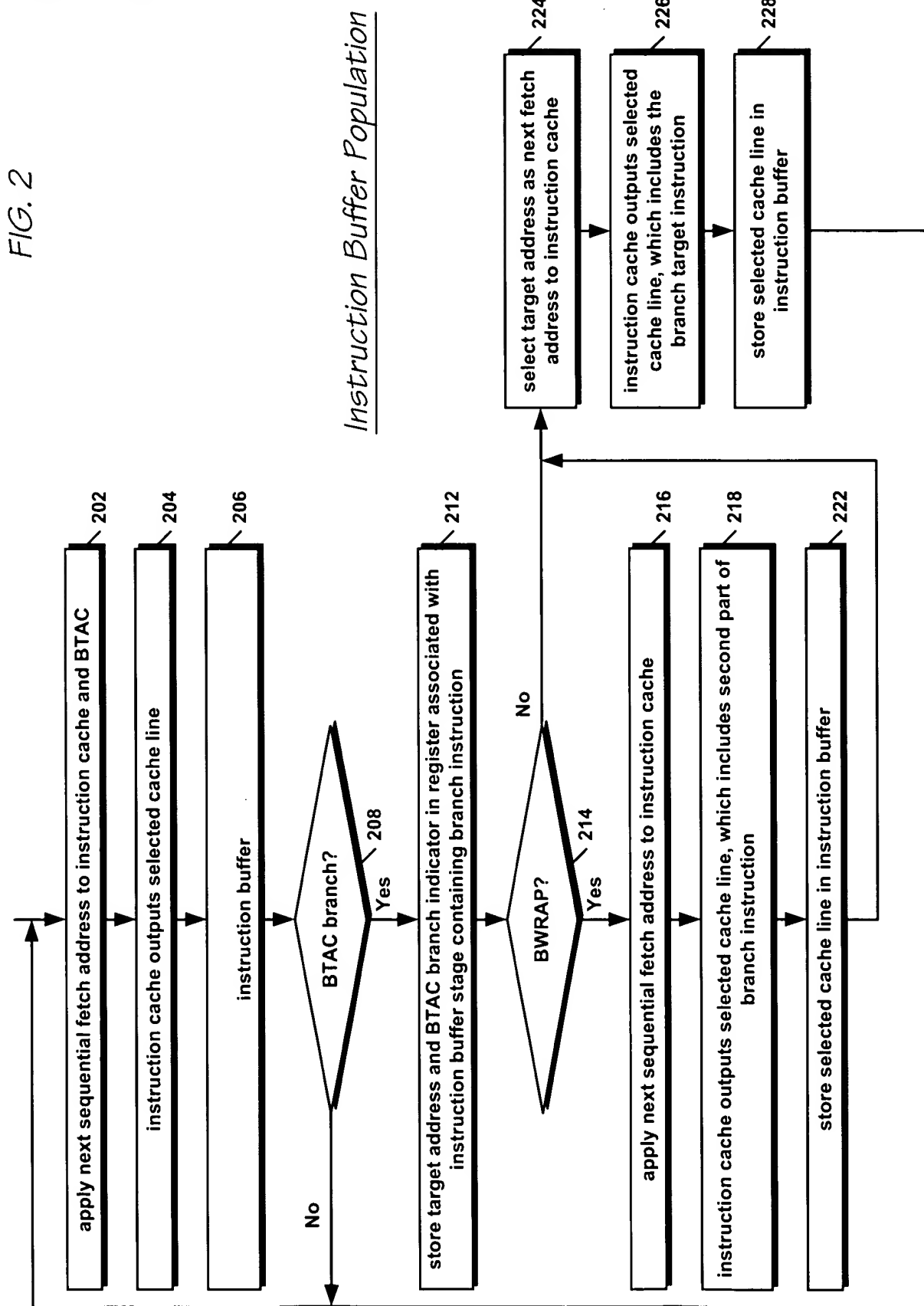
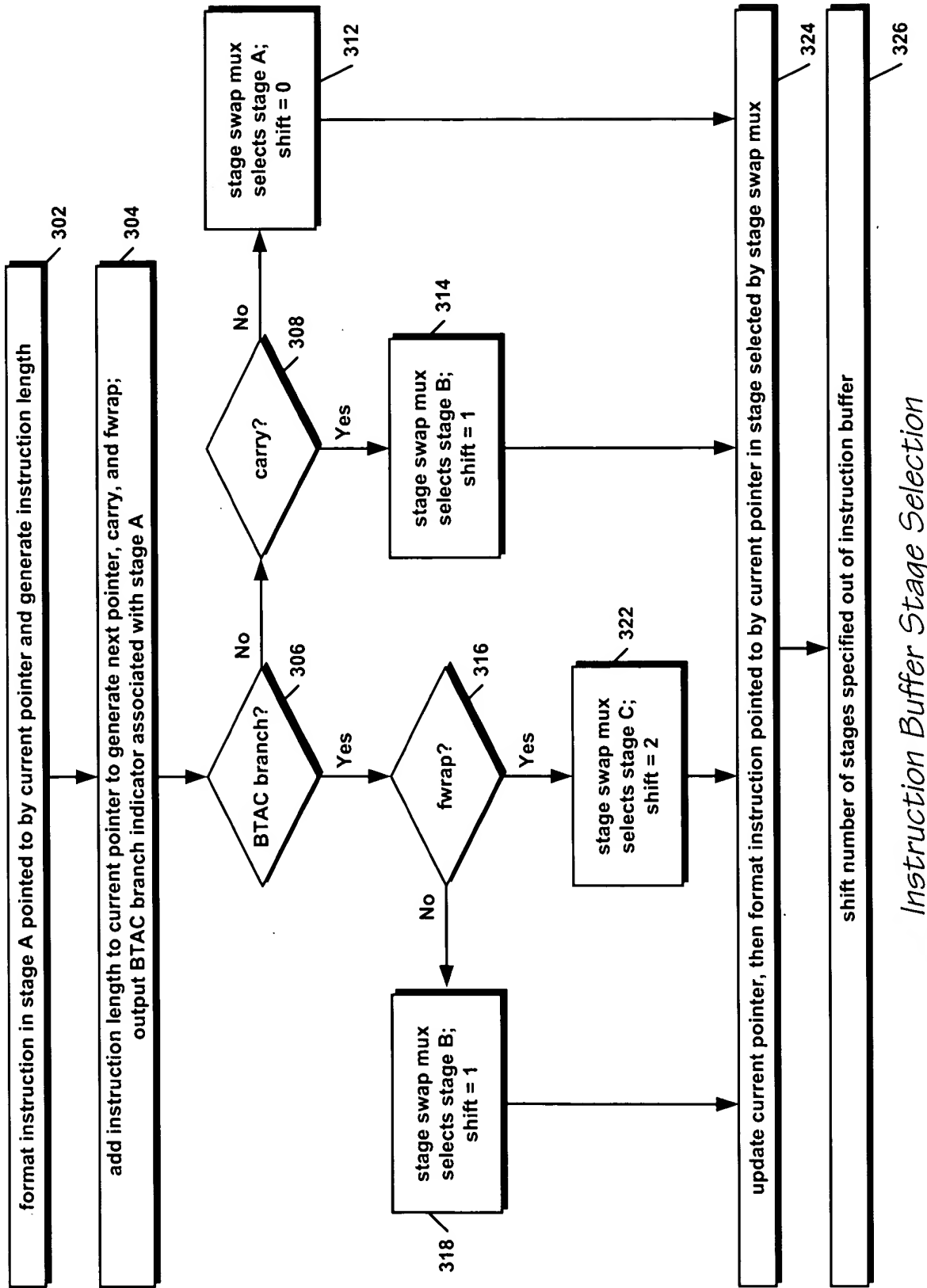


FIG. 2



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FIG. 3



Instruction Buffer Stage Selection

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Figure 4A

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
stage D																	
stage C																	
stage B																	
stage A									ADD [0]	ADD [1]	ADD [2]	SUB [0]	SUB [1]	SUB [2]	SUB [3]		

current pointer = 8
instruction length = 3
BTAC branch indicator = false
target address[0:3] = n/a

next pointer = 11
carry = false
fwrap = false

stage swap mux selects stage A

shift = 0

Figure 4B

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
stage D																
stage C																
stage B	SUB [0]	SUB [1]	SUB [2]	SUB [3]												
stage A														ADD [0]	ADD [1]	ADD [2]

```
current pointer = 13
instruction length = 3
BTAC branch indicator = false
target address[0:3] = n/a
```

```
next pointer = 0
carry = true
fwrap = false
```

stage swap mux selects stage B

shift = 1

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Figure 4D

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
stage D																	
stage C																	
stage B												SUB [0]	SUB [1]	SUB [2]	SUB [3]		
stage A								JCC [0]	JCC [1]								

current pointer = 7
instruction length = 2
BTAC branch indicator[7] = true
target address[0:3] = 11

next pointer = 9
carry = false
fwrap = false

stage swap mux selects stage B

shift = 1

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Figure 4E

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	stage D
																	stage C
												SUB [0]	SUB [1]	SUB [2]	SUB [3]		stage B
															JCC [0]	JCC [1]	stage A

current pointer = 14
instruction length = 2
BTAC branch indicator[14] = true
target address[0:3] = 11

next pointer = 0
carry = true
fwrap = false

stage swap mux selects stage B

shift = 1

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Instruction Buffer Stage Selection Example: Case 5

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

FOED40" 2E88686D

Figure 4F

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	stage D
												SUB [0]	SUB [1]	SUB [2]	SUB [3]		stage C
JCC [1]																	stage B
																JCC [0]	stage A

current pointer = 15
instruction length = 2
BTAC branch indicator[15] = true
target address[0:3] = 11

next pointer = 1
carry = true
fwrap = true

stage swap mux selects stage C

shift = 2

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Instruction Buffer Stage Selection Example: Case 6